Refining converter steel with...

chrome oxides. To maintain the fluidity and reactivity of the slag under the test conditions, its quantity was increased to 6.5% of the metal weight, the temperature of the liquid slag in the furnace was raised to 1,750 - 1,850°C and the interval between pouring the slag and tapping the metal was reduced (to 2 min. 5 sec. on the average). The ladle was preheated to 600 - 800°C prior to slag tapping. The basic slag forming additives were common open-hearth lime (with up to 0.2% S), bauxite and in some cases (for medium-carbon and high-carbon steel grades) fluorite. Lime was added in two batches: prior to pouring the cast iron and 4 - 5 minutes after blowing started; the other two components were added together with lime. The quantity of the latter used for alloy and high-grade steels was 8 - 9%, for rail and axle steel 6 - 7% of the charge weight. ShKh15, 12Kh3A, 06N3 grades, deep-drawing steel and carbon (tool) steels were cast with fluorite (0.3 - 0.8% of the charge weight; the slag was tapped twice.) To determine the optimum cast iron composition, cast irons with components varying greatly in amount were used (0.28 - 0.78% Si, 0.50 - 1.80% Mn, 0.025 - 0.095% S, 0.086 - 0.220P). The slags were very active already at the beginning of blowing. The basicity of slags ($CaO:(SiO_2+P_2O_5)$) increased progressively (5 - 5 1/2 minutes after blowing started it was 2.0, at the end of blowing: 3.0 - 4.0). The synthetic slag refining method in converters with oxygen top blast results in a

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Refining converter steel with...

high degree of desulfuration. When cast irons are processed with a high (0.085 - 0.095%) sulfur content, this could be reduced to 0.030 - 0.042% during blowing and to 0.009 - 0.013% after slag treatment. Desulfuration is most effective in the У10- У13А (U10-U13A) grades (up to 72.8%), in axle steel (71.9%) and Sh3n15 steel grade (67.8%). The final phosphorus content of steel can also be reduced to 0.020 - 0.030% by slag treatment, even if made of cast iron containing 0.22% phosphorus. The synthetic slag method reduces the content of oxygen and non-metallic inclusions (sulfides, oxides) of the steel. Converter structural steel grades, refined by synthetic slag, have a greater ductility and notch toughness (mainly across the fibre), than conventional converter, open-hearth and electric steels. Most probably, the ductility is improved by the effect of the synthetic slag emulsion on the metal which reduces the sulfur content and non-metallic inclusions; a sub-microscopic silicium-oxygen phase may also have some effect. Slag-refined converter axle steels displayed a high ductility at -20°, -40° and -60°C, the new refining method imparts the 06N3 cold-resistant converter steel at 150 - 183°C the same degree of frost-resistance as found in electric steels. The tests were carried out with A. N. Korneyenkov, G. V. Gurskiy, Ya. M. Bokshitskiy, A. K. Petrov, Ye. D. Mokhir, R. I. Kolyasnikova, G. A. Khasin, V. P. Danilin,

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Refining converter steel with...

S/133/62/000/003/001/003
A054/A127

P. S. Plekhanov, A. I. Mazun, and A. A. Markin participating. There are 3 figures, 9 tables and 2 Soviet-bloc references.

Card 5/5

VOINOV, Semen Georgiyevich; SHALIMOV, Anatoliy Georgiyevich; KOSOY, Leonid Fineasovich; KALINNIKOV, Yevgeniy Sergeyevich; VENETSKIY, S.I., red. izd-va; MIKHAYLOVA, V.V., tekhn. red.

[Steel refining in the ladle by means of liquid synthetic slag] Rafinirovanie stali v kovshe zhidkim sinteticheskim shlakom. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 110 p. (MIRA 15:1)
(Steel--Metallurgy)

S/137/61/000/008/012/037
A060/A101

AUTHOR: Voinov, S. G.

TITLE: How a new technique of smelting ball-bearing steel was elaborated and put into production. The mechanism of formation of nonmetallic impurities

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 8, 1961, 37, abstract 8V228 ("Fiz.-khim. osnovy proiz-va stali", Moscow, Metallurgizdat, 1961, 398-421)

TEXT: On the basis of investigations carried out by the TsNIIChM together with a number of factories, a new technique was elaborated for the smelting of ball-bearing steel. The method is characterized by the following peculiarities: the charge is formed without forge pig iron, the dephosphorization of the metal is partly combined with the smelting, by means of adding Fe ore and lime to the charge and during the course of the smelting. During the oxidation period 0.2 - 0.3% of the C is intensively burned out of the metal. Before introducing the refining slag the metal is preliminarily reduced by a mixture of C, Fe-Mn, Fe-Si and Al. The ground coke is put on the surface of the refining slag before

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switching the current on. The CaC_2 content in that slag is maintained at the level of 1.0 - 1.5%, and by the tapping of the smelt - on the level 0.5%. Fe-Cr is aftercharged to the metal 15 - 20 min after the start of the refining. The refining slag is reduced in three stages by ground 75% Fe-Si. The metal temperature before tapping is 1,560 - 1,580°C. The slag is finally reduced by charcoal and powdered Al, and the metal-by lump Al in the dosage 0.5 - 0.6 kg/ton of steel. The introduction of this technique at the Kuznetsk Metallurgical Combine made it possible to reduce the mean oxide point from 2.52 to 1.64 - 1.59, and at the Chelyabinsk and Zlatoust metallurgical works - from 2.75 to 1.87, and from 2.69 to 2.25 respectively. The paper also considers the formation mechanism of nonmetallic impurities in ball-bearing steel, and it is shown that the factor determining the nature of the impurities is the O content before the final reduction of the metal by Al and its casting in molds.

A. Shalimov

[Abstracter's note: Complete translation]

VOINOV, S. G.

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PHASE I BOOK EXPLOITATION SOV/5411

Konferentsiya po fiziko-khimicheskim osnovam proizvodstva stali. 5th, Moscow, 1959.

Fiziko-khimicheskiye osnovy proizvodstva stali; trudy konferentsii (Physicochemical Bases of Steel Making; Transactions of the Fifth Conference on the Physicochemical Bases of Steelmaking) Moscow, Metallurgizdat, 1961. 512 p. Errata slip inserted. 3,700 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut metallurgii imeni A. A. Baykova.

Responsible Ed.: A. M. Samarin, Corresponding Member, Academy of Sciences USSR; Ed. of Publishing House: Ya. D. Rozentsveyg. Tech. Ed.: V. V. Mikhaylova.

Card 1/16

Physicochemical Bases of (Cont.) SOV/5411

PURPOSE: This collection of articles is intended for engineers and technicians of metallurgical and machine-building plants, senior students of schools of higher education, staff members of design bureaus and planning institutes, and scientific research workers.

COVERAGE: The collection contains reports presented at the fifth annual convention devoted to the review of the physicochemical bases of the steelmaking process. These reports deal with problems of the mechanism and kinetics of reactions taking place in the molten metal in steelmaking furnaces. The following are also discussed: problems involved in the production of alloyed steel, the structure of the ingot, the mechanism of solidification, and the converter steelmaking process. The articles contain conclusions drawn from the results of experimental studies, and are accompanied by references of which most are Soviet.

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Urazova, V. A., and Yu. T. Lukashevich-Duvanova. Inclusions in the Titanium-Containing Low-Carbon Steel 354

Lukashevich-Duvanova, Yu. T., and O. V. Dimant. Inclusions in Zirconium- and Niobium-Containing Low-Carbon Steel 364

Kholodov, A. I. Precipitation Deoxidation in a Basic Electric Furnace 384

Kholodov, A. I. Precipitation Deoxidation in an Acid Electric Furnace 391

Voinov, S. G. Development and Introduction of New Techniques in Making Ball-Bearing Steel; Mechanism of the Formation of Nonmetallic Inclusions 398

Ageyev, P. Ya. Kinetics of Metal Deoxidation Processes 422

22573
S/133/61/000/001/004/016
A054/A033

18.3200

AUTHORS: Voinov, S.G., Candidate of Technical Sciences; Kosoy, L.F., Engineer

TITLE: Improving the Melting Technology of Structural Alloy Steel

PERIODICAL: Stal', 1961, No. 1, pp. 34 - 38

TEXT: The technology currently applied for structural alloy steels is not sufficiently economical as regards the productivity of arc furnaces; nor can the required properties of the steel be obtained, because they largely depend on the composition of the refining slag which cannot be fully controlled. To eliminate the deficiencies of the conventional technology, engineers of the TsNIIChM in co-operation with a team of the Zlatoustovskiy metallurgicheskiy zavod (Zlatoustovsk Metallurgical Plant) consisting of A.K. Petrov, G.A. Vachugov, O.M. Chekhomov, A.I. Markelov et al. have developed a new process which fully allows for the important factor of the metal properties, greatly affected by the non-metallic impurities, submicroscopic siliciumoxide phase and hydrogen. In the electric arc furnace of the ZMZ 25 experimental meltings were carried out with 30ХГСА (30KhGSA), 60Х2Н1,5 (60Kh2N1.5), С65А (S65A) and С65ГА (S65GA) grade steels. The charge consisted of carbon steel and railway scrap, while, in accordance with the modified

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Improving the Melting Technology of Structural Alloy Steel

technology, no forge pig was added; 0.2 - 0.3% C was used for oxidation during boiling and lime up to 1.5% of the charge weight was added. 60Kh2N1.5 was produced by remelting, using low-carbon and chrome-nickel steel scraps. Another feature of the new process was that dephosphorization was combined with the melting of the charge in order to obtain a phosphorus content not exceeding 0.015% during fusion while the P-content of the charge was calculated for 0.040 - 0.055%. Moreover, preliminary deoxidation of the metal was effected by adding electrode chips, lumps of aluminum (0.4 kg/ton for 30KhGSA and 60Kh2N1.5 and 0.5 kg/ton for S65A and S65GA steels), furthermore by lumps of 75-% ferrosilicium (2.2 kg/ton) and ferromanganese. The deoxidation of the bath was carried out in three batches, containing crushed ferrosilicium, at 10 min intervals, while, before the third batch, lumps of aluminum (0.3 kg/ton) were added. For the 30KhGSA steel the third batch consisted of ferrosilicium lumps for alloying. Ferrochromium was added after the second and ferromanganese after the third addition of ferrosilicium. About 7 - 8 min before tapping the slag, the furnace being switched off, a mixture was sprayed on the slag, consisting of 1 kg/ton aluminum, 2 - 3 shovels of crushed lime and 0.2 kg/ton charcoal, to reduce the amount of sulfide and oxide inclusions and for the scorification of siliciumoxide. A final deoxidation of

Improving the Melting Technology of Structural Alloy Steel

the bath is effected by adding 0.4 kg/ton aluminum lumps (for the 30KhGSA type steel 0.2 kg/ton). The refining slag was composed of 500 kg lime, 90 kg fluorite and quartzite, respectively, 60 kg crushed fireclay and, depending on the conditions of the furnace, 25 - 35 kg crushed coke. In one of the meltings of 30KhGSA steel, at the end of the refining period and before the deoxidation of the slag by aluminum powder, a synthetic slag mixture was charged, containing 100 kg lime, 40 kg fluorite, 40 kg calcined soda and 20 kg pan salt. Before charging, this mixture was roasted at 1,000°C in a heating furnace on iron plates for 4 - 8 h. The above-mentioned modifications of the conventional process improve the technological indices of melting. Decarbonization takes place at a high rate, for 30KhGSA at 0.71% C/h, for S65GA 0.58% C/h (average values). The process ensures a high rate of dephosphorization. At a calculated P-content of the charge of 0.04 - 0.045%, the P-content for 30KhGSA during fusion was 0.011%, at the end of boiling 0.005% (see table). The refining slag possesses a high deoxidizing capacity. The average FeO content of slag during fusion for the 30KhGSA steel was 0.56%, while it was 0.38, 0.22, 0.33% for the S65GA steel. The rate of desulfurization is also increased: the S-content of the finished 30KhGSA, S65GA and 60Kh2N1.5 steels is not more than 0.008, 0.007 and 0.007%, respectively. The

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Improving the Melting Technology of Structural Alloy Steel

melting time is shortened (Table 2). With regard to metal properties see Table 3. The new metal types are free of non-metallic impurities to a high degree. The characteristic values for S65GA steel with regard to impurities are the following (in the numerator: for the experimental technology and in the denominator: for the conventional):

sulfides: $\frac{1.71}{2.09}$; oxides: $\frac{1.50}{1.80}$

The new technology made it possible to increase the productivity of arc furnaces by 15%. There are 3 figures and 1 table.

ASSOCIATION: TsNIIChM

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VOINOV, S.G., kand.tekhn.nauk; MARKELOV, A.I. inzh.

New design of a 20-ton arc furnace. Metallurg 5 no.5:15-17 My '60.
(MIRA 14:3)

(Electric furnaces)

VOINOV, S.G., kand.tekhn.nauk; KOSOY, L.F., inzh.

Improving the technology of making structural alloyed steel.
Stal' 21 no. 1:34-38 Ja '61 (MIRA 14:1)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii.
(Steel, Structural--Electrometallurgy)

85489
S/133/60/000/010/004/013
A054/A029

18.3200

AUTHORS: Voinov, S.G., Snalimov, A.G., - Candidates of Technical Sciences

TITLE: Treatment of Ball Bearing Steel With Synthetic Slag

PERIODICAL: Stal', 1960, No. 10, pp. 902 - 904

TEXT: In order to collect more data on steel treated with synthetic lime-alumina slag in the ladle, tests were carried out in the TsNIIChM by melting a charge in a 30 kg induction furnace and by treating the steel with a slag containing aluminum oxide (40% by weight), lime (46.2%), fluorite (6.9%) and soda (6.9%). The specimens of this steel were purer; they had a sulfur content of 0.006% as compared to 0.009% for steel produced according to the conventional process, while the oxide and sulfide content also decreased. Tests were also made on an industrial scale by tapping the metal with slags of various composition and by treating the metal in the ladle with synthetic lime-alumina slag. For this purpose, three kinds of slags (lime-alumina, white slag without CaC_2 and lime-fluorite containing slag) were used. ШХ 15 (ShKh 15) ball bearing steel was melted in 30-ton and 20-ton basic arc furnaces and the metallographic examinations of the specimens before and after tapping revealed that the changes in

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S/133/60/000/010/004/013
A054/A029

Treatment of Ball Bearing Steel With Synthetic Slag

the composition of the refining slag did not affect the sulfur content of the metal from the 30-ton furnace in which the charge was practically free from sulfur, whereas a great difference in sulfur content in the steel taken from the 20-ton furnace was observed:

Meltings	A	B	C
S-Content, % in the Metal From the			
30-ton Furnace	0.0061	0.0062	0.0065
20-ton Furnace	0.0102	0.0114	-

It was found that with an increase in the aluminum concentration of the slag the quantity of inclusions decreased somewhat. It was also established that for furnaces with basic lining slags containing only CaO and Al_2O_3 are not suitable and that by tapping metal and slag simultaneously into the ladle from normal height, the slag did not emulsify sufficiently. The influence of slag treatment in the ladle was tested in three meltings with a slag of the following composition: CaO 53%, Al_2O_3 43%, $SiO_2 \leq 3\%$, FeO 1%. The slag was rather liquid and mobile in the ladle, but lost a considerable part of its mobility during pouring, transport, etc. The samples taken before and after the treatment yielded the following results (numerator: contents before, denominator: contents after the slag treat-

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Treatment of Ball Bearing Steel With Synthetic Slag

ment):

Melting	1	2	3
Sulfur Content, %	0.028 / 0.005	0.022 / 0.006	0.022 / 0.007
Oxygen Content, %	0.0024 / 0.0026	— / 0.0026	0.0025 / 0.0018
Stable Non-Metallic Inclusions, %	— / —	0.0080 / 0.0052	— / —

These data show that the sulfur content decreased up to 3 - 5 times after the treatment, the oxygen content remained fairly low throughout the process while the content of impurities also decreased somewhat. Another advantage of the process is that the output of electric furnaces increases due to the reduction of the refining time by 30 - 45 min. There are 3 figures.

ASSOCIATION: TsNIIChM

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S/133/60/000/007/007/016

AUTHORS: Voinov, S.G., Candidate of Technical Sciences; Korneyenkov, A.N., Engineer; Petrov, A.K., Engineer; Bokshitskiy, Ya.M., Engineer; Markelov, A.I., Engineer; Shalimov, A.G., Candidate of Technical Sciences; Kosoy, L.F., Engineer; Chekhomov, O.M., Engineer; Khasin, G.A., Engineer

TITLE: The Refining of Alloy Steels by Molten Synthetic Slags

PERIODICAL: Stal', 1960, No. 7, pp. 611 - 618

TEXT: Experiments of refining alloy steels by molten slags in the ladle were made to improve this process. 315 experimental castings were carried out in 10-t and 20-t basic arc furnaces, with ball bearing, structural and stainless steels. The slag was prepared in a 10-t arc furnace (with a 2500 kva transformer) from a mixture of 95 kg lime and 80 kg commercial grade alum earth; the synthetic slag poured into the ladle was about 5 - 6% of the metal weight. Two kinds of slags were used, one for ball bearing steel (A = A) and one for structural and stainless steel (B = B) with the following composition (the nominators indicate the values before, the denominators after the treatment of the metal):

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The Refining of Alloy Steels by Molten Synthetic Slags

Slag	CaO	Al_2O_3	SiO_2	MgO	FeO
A	53.3 / 49.5	44.4 / 42.2	1.42 / 3.54	1.22 / 3.46	0.18 / 0.25
B	53.6 / 50.4	43.8 / 41.5	1.31 / 4.32	1.46 / 3.83	0.18 / 0.23

The temperature of the slag varied between 1,650°C and 1,750°C. The electric power used in preparing the slag was 150 kwh per 1 ton of steel, this value, however, will not be higher than 90 kwh/ton when using furnaces specially designed for this purpose. The electrode consumption in the smelting furnace amounted to 1.3 kg/ton steel. In the experiments the following steel types were used: ШХ15 (ShKh15), ШХ15СГ (ShKh15SG), С65А (S65A), 30ХГСА (30KhGSA), 30ХГСНА (30KhGSNA), 40ХНМА (40KhNMA), and У7А-У8А (in 20-t electric furnaces) and 38ХМЮА (38KhMYuA), 35ХЮА (35KhYuA), 18ХНВА (18KhNVA), 12Х2Н4А (12Kh2N4A), 12ХН3А (12KhN3A), СХ8 (SKh8), 1Х13 (1Kh13) and 1Х18Н9Т (1Kh18N9T) (in 10-t electric furnaces). Several modifications of refining are described under basic and chamotte slag with different amounts of ferrosilicon and aluminum; with and without deoxidation of the metal and with varying dura-

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The Refining of Alloy Steels by Molten Synthetic Slags

tion of the process. Generally it was found that the refining time was reduced by 45 - 50 min for all steel types and the output of the electric furnace could be increased by 10 - 15%. The macrostructure and the fracturing of the tested steel types were found to be satisfactory. The sulfur content decreased to 0.005 - 0.007%, with an initial sulfur content of 0.040%. The most considerable desulfuration by synthetic slag was obtained in ball bearing steels (0.003 -0.006%). whereas desulfuration was less intensive in structural steels, in which the sulfur content was 0.001 - 0.002% higher than in ball bearing steels, but still 40 - 50% less than in the conventional type of this kind of steel, with 0.011 - 0.012% S content. It was found that by refining with synthetic slag the amount of sulfide and oxide inclusions could also be reduced. Structural steels of high purity (with regard to inclusions) can be produced by refining with basic slags and when applying diffusion deoxidation. On account of the decrease of the sulfur content and non-metallic inclusions, the mechanical properties, in particular the impact strength and the relative shrinking, are considerably improved in structural and stainless steels. The best results were obtained for the 30KhGSA steel: 5.2 kg-m/cm^2 and 43.5%, respectively. These values

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The Refining of Alloy Steels by Molten Synthetic Slags

are 1.6 times and twice higher than those for the conventional type of this steel. It was also found that the anisotropy of the metal properties decreased: the relation of values for relative shrinkage of transverse and longitudinal specimens increased from 0.62 (of the conventional metal) to 0.79 and 0.86 on the average for the test metal, observed in two variants of the process (variant I and II), whereas the relation of the values for impact strength was raised from 0.56 to 0.71 and 0.74, respectively. It was found that by processing open-hearth steel and converter steel with synthetic slag, according to the method described, the properties of these steel types can be raised to the level of those of electrosteel. The article contains the principal technological data for the test steels, the changes of the sulfur content in the metal and the synthetic slag in the various modifications of refining and the indices of mechanical properties of the structural and stainless steel specimens. There are 6 sets of graphs, 1 diagram, 3 tables and 4 references: 1 Soviet, 1 Swedish and 2 English.

ASSOCIATION: Ukrainskiy institut metallov (Ukrainian Metal Institute)

VOINOV, S.G., kand.tekhn.nauk

Efficient procedure for the making of ball-bearing steel.
Stal' 20 no.8:716-721 Ag '60. (MIRA 13:7)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii.
(Bearing metals) (Steel--Metallurgy)

SOV/112-57-9-18930

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1957, Nr 9, p 134 (USSR)

AUTHOR: Voinov, S. G.

TITLE: Improvement in Electric and Thermal Control of Arc Furnaces (Usovershenstvovaniye regulirovaniya elektricheskogo i teplovogo rezhimov dugovykh pechey)

PERIODICAL: Tr. nauch.-tekhn. o-va chernoy metallurgii, 1956, Vol 9, pp 407-410

ABSTRACT: The functioning of arc furnaces is characterized by thermal and electrical conditions of melting which secure constant heating of the metal bath during the entire process. An oxidation period is a distinctive feature of the process. As a result, the bath is usually insufficiently hot at the beginning of the refining, which forces one to increase the electric power during the reduction period; the additional energy is used basically to heat the metal up to a preset melt-tapping temperature. The conditions described above are illustrated by materials from the Chelyabinsk Metallurgical Plant. Data are presented of research that served to improve the thermal and electrical

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Improvement in Electric and Thermal Control of Arc Furnaces

conditions of arc melting so that the bath was adequately heated at the beginning of the reduction period and the power during the refining period reduced. Metal heating was gradually decreased down to the temperature of melt tapping. The new melting conditions have already been adopted at the Dneprospetsstal' Plant and at the Chelyabinsk Metallurgical Combine. Results of their adoption are: (a) Dinas roof stability has increased 4-5 times, wall stability 1.5-2 times; (b) metal quality has become better, reject quantity has decreased; (c) electric energy consumption has decreased approximately to 50 kwh/t of ingot; (d) a more standardized composition of refined slag has been attained; (e) the new conditions have facilitated the work of the furnace crew.

V.I.L.

Card 2/2

LIKHACHEV, N.V., prof.; VOINOV, S.I., kand. veterin. nauk; KABAKOVICH, N.B., mladshiy nauchnyy sotrudnik; ALEKSEYENOK, A.Ya., mladshiy nauchnyy sotrudnik; KENIYA, T.Sh.

Immunogenic properties of the strain of foot-and-mouth disease viruses of the SAT-1 type. Veterinariia 41 no.5:23-25 My '64. (MIRA 18:3)

1. Gosudarstvennyy nauchno-kontrol'nyy institut veterinarnykh preparatov (for all except Keniya). 2. Deystvitel'nyy chlen Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni V.I. Lenina (for Likhachev). 3. Nachal'nik Upravleniya veterinarii Gruzinskoy SSR (for Keniya).

VOINOV, S.I., kand.veterin.nauk; ZAGROBYAN, L.I., kand.veterin.nauk

Experimental study of the SAT-1 strain of foot-and-mouth disease virus. Veterinariia 41 no.8:17-18 Ag '64. (MIRA 18.4)

1. Gosudarstvennyy nauchno-kontrol'nyy institut veterinarnykh preparatov (for Voinov). 2. Armyanskiy nauchno-issledovatel'skiy institut zhivotnovodstva i veterinarii (for Zagrobyan).

VOINOV, S.I., kand. veterin. nauk

Controlling foot-and-mouth disease. Veterinariia 41 no.5:32-37 My '64. (MIRA 18:3)

VOINOV, S.I.; CHEREMISHKINA, I.S.

Modern methods of controlling foot-and-mouth desease in the German Democratic Republic. Veterinariia 41 no.5:108-109 My '64. (MIRA 18:3)

VOINOV, S. I., KARPOVICH, M. B. and BAZYLEV, P. M.

"Standard hyperimmunious serums from rabbits for determination of foot-and-mouth disease types by the method of CFT (Complement Fixation Text)."

Veterinariya, Vol. 37, No. 1, 1960, p. 33

Voinov - Caus Vet Sci - Gov. Sci. Res Inst Vet Prepara.

VOINOV, S.I., kand. veter. nauk; KARPOVICH, M.B., mladshiy nauchnyy sotrudnik; SHEVYREV, N.S.; BELYAYEV, A.S.; YELAGINA, V.B.; KREMEN', G.Ya., veterinarnyy vrach

Results of a two-year industrial manufacture and control of the O, A. and S types of lapinized foot- and-mouth disease antigens. Veterinariia 40 no.11:69-70 N '63.

(MIRA 17:9)

1. Gosudarstvennyy nauchno-kontrol'nyy institut veterinarnykh preparatov Ministerstva sel'skogo khozyaystva SSSR (for Voinov, Karpovich). 2. Glavnyy veterinarnyy vrach Kurskoy biofabriki (for Shevyrev). 3. Nachal'nik nauchno-kontrol'noy laboratorii Kurskoy biofabriki (for Belyayev). 4. Nachal'nik tsekha tipospetsificheskikh yashchurnykh komponentov Kurskoy biofabriki (for Yelagina). 5. Kurskaya biofabrika (for Kremen').

VOINOV, S.I., kandidat veterinarnykh nauk.

Animals infected with the foot-and-mouth disease as virus carriers. Veterinariia 32 no.1:25-28 Ja '55. (MLRA 8:2)

1.Uzbekskiy nauchno-issledovatel'skiy veterinarnyy institut
(FOOT-AND-MOUTH DISEASE)

VOINOV, S.I., kandidat veterinarnykh nauk.

Resistance of foot-and -mouth disease viruses on pastures. Veterinariia 33 no.6:66-67 Je '56. (MLRA 9:8)

1. Uzbekskiy nauchno-issledovatel'skiy veterinarnyy institut.
(Uzbekistan--Foot and mouth disease) (Viruses)

BAZYLEV, P.M., doktor veter.nauk; VOINOV, S.I., kand.veter. nauk;
KARPOVICH, M.B., veterinarnyy vrach

Standard hyperimmune sera from rabbits for the virus types of foot-and-mouth disease by means of the complement fixation reaction. Veterinariia 37 no.1:33-35 Ja '60. (MIRA 16:6)

1. Gosudarstvennyy nauchno-kontrol'nyy institut veterinarnykh preparatov.
(Foot-and-mouth disease) (Serum diagnosis) (Complement fixation)

VOINOV, S.V., mayor meditsinskoy sluzhby

Modernization of Diterikhs' splint. Voen.-med.zhur. no.10:80 '64.
(MIRA 18:5)

VOINOV, S.V., kapitan meditsinskoy sluzhby

Excretory function of the gastrointestinal tract in radiation sickness. Voen.-med. zhur. no.6:75 Je '61. (MIRA 14:8)
(DIGESTION) (RADIATION SICKNESS)

VOINOV, V.[deceased; KUKUSHKIN, V., red.; SHIROKOVA, S., tekhn. red.

[In a land of celestial mountains] V kraiu nebesnykh gor. Moskva, Izd-vo "Pravda," 1962. 48 p. (Biblioteka "Komsomol'skoi pravdy," no.4) (MIRA 15:5)
(Kirghizistan--Description and travel)

VOINOV, V. ; IIIEVA, P.

Obstacles can be overcome. p. 36.

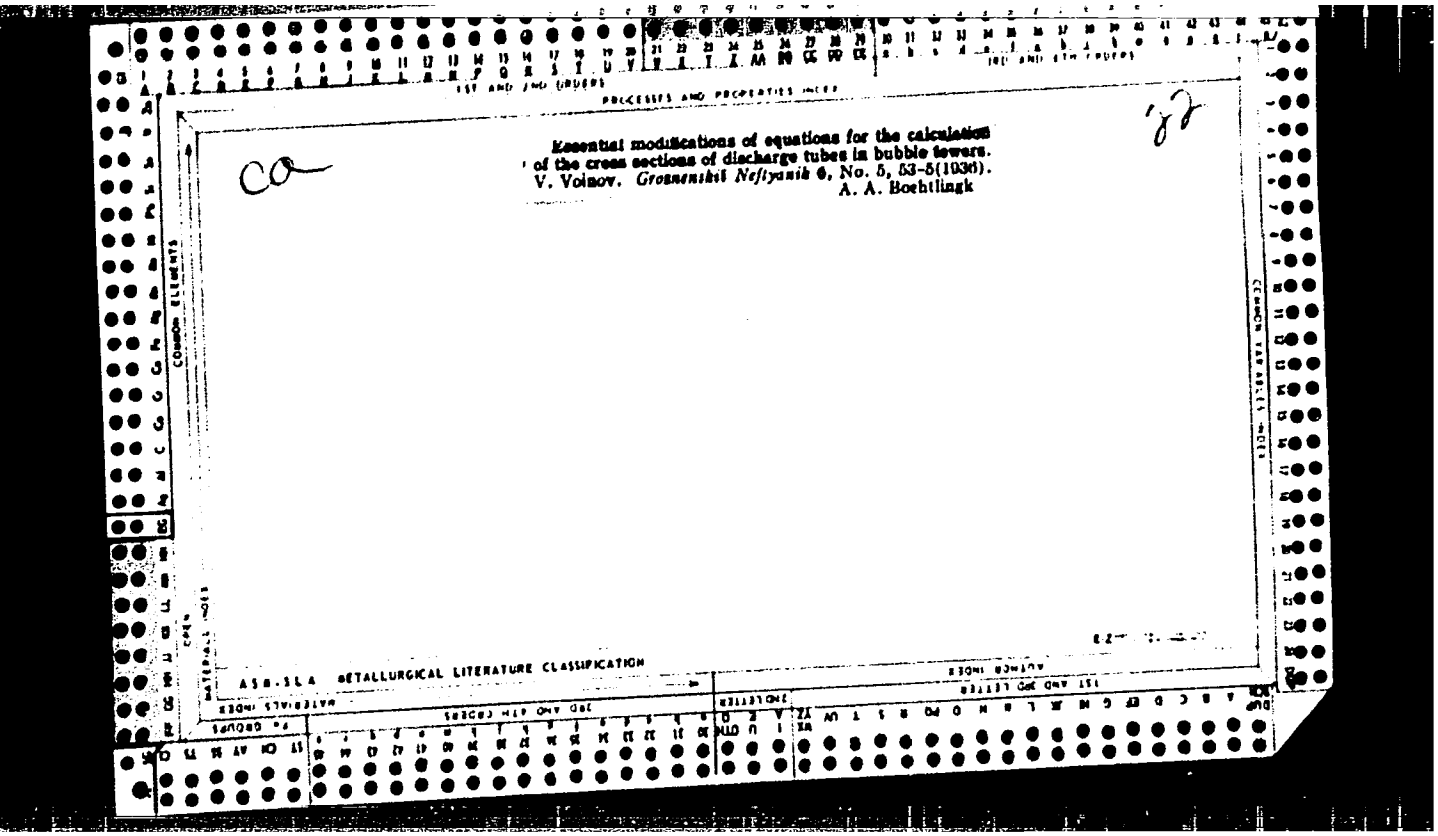
Vol.10, no. 9, Sept. 1955
KOOPERATIVNO ZEMEDELIE
Sofiya, Bulgaria

So: Eastern European Accession Vol. 5 No. 1 Jan. 1956

VOINOV, V., inzh.-stroitel'

First steps of the economi accounting group. Sil'.bud. 12 no.4:18 Ap '62. (MIRA 15:8)

1. Dzhankoyskoye rayonnoye otdeleniye "Sil'gosptekhniki" Krymskoy oblasti.
(Krymskaya Province—Construction industry—Accounting)



Essential modifications of equations for the calculation of the cross sections of discharge tubes in bubble towers.
V. Volnov. *Grozenskii Neftyanik* 6, No. 5, 53-5(1936).
A. A. Boehtlingk

SOLOVSKOY, V.; VOINOV, V.; ZELEKIN, Yu.

Work in the communist way. NTO 5 no.2:9 F '63. (MIRA 16:3)

1. Predsedatel' sektsii svarki pervichnoy organizatsii Nauchno-tekhnicheskogo obshchestva Chelyabinskogo nauchno-issledovatel'skogo proyektno-tekhnologicheskogo instituta avtomatizatsii i mekhanizatsii mashinostroyeniya (for Solovskoy). 2. Uchenyy sekretar' svarki pervichnoy organizatsii Nauchno-tekhnicheskogo obshchestva Chelyabinskogo nauchno-issledovatel'skogo proyektno-tekhnologicheskogo instituta avtomatizatsii i mekhanizatsii mashinostroyeniya (for Voinov). 3. Profsoyuznyy organizator otdela svarki Chelyabinskogo nauchno-issledovatel'skogo proyektno-tekhnologicheskogo instituta avtomatizatsii i mekhanizatsii mashinostroyeniya (for Zelenkin). (Engineers)

VOINOV, A.P., professor; ZYSMAN, A.I., dotsent; KULIN, V.I.; BELYAYEV, S.V., arkhitektor; BELSHCHIK, N.P., inzh.; VOINOV, V.A.

New designs of precast apartment houses built of spatial elements. Sbor.nauch.trud.Bel.politekh.inst. no.81:15-60 '59. (MIRA 13:5)

(White Russia--Apartment houses)
(Precast concrete construction)

VOINOV, V.A.

14(5) PHASE I BOOK EXPLOITATION SOV/2818

Vsesoyuznyy nauchno-issledovatel'skiy institut geofizicheskikh metodov razvedki

Razvedochnaya i promyslovaya geofizika, vyp. 21. (Exploration and Industrial Geophysics, No. 21) Moscow, Gostoptekhizdat, 1958. 112 p. (Series: Obmen proizvodstvennym opytom) Errata slip inserted. 4,500 copies printed.

Ed.: A. Y. Bogdanov; Exec. Ed.: N. P. Dobryanina; Tech. Ed.: I. G. Fedotova.

PURPOSE: This booklet is intended for geophysical engineering and technical personnel in the petroleum industry.

COVERAGE: Individual articles of this collection discuss improvements in methods of interpreting seismic and gravimetric data, testing of seismic receivers, and the refinement of seismic station amplifiers. A nomogram is described for the rapid computation of magnetic properties of rock samples, and a summary is provided of experience in marking oil contacts. Improved methods and equipment of radioactive methods of surveying boreholes are also discussed. References accompany individual articles.

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AVAILABLE: Library of Congress

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VOINOV, V.A.

Nomogram for determining the shift of isonormals to isoverticals. Razved. i prom. geofiz. no.21:31-40 '58. (MIRA 11:10)
(Geology--Maps)

VOINOV, V.I. (poselok Proletarskiy, Tadzhikskaya SSR)

How we keep culverts in good repair. Put' i put.khoz. no.1:24 Ja '59. (MIRA 12:2)
(Culverts) (Railroads--Maintenance and repair)

ANDREYEV, V.F.; VOINOV, V.P.

Friction welding machine. Avtom. svar. 17 no.10:84-85 O '64
(MIRA 18:1)

VOINOV, V.P., inzh.

Selecting parameters of conditions for friction welding of low carbon steel. Svar.proizv. no.11:15-17 N '64. (MIRA 18:1)

1. NIPTIAMMASH Yuzhno-Ural'skogo sovnarkhoza.

VAVILOV, A.F.; VOINOV, V.P.; VOLKOV, Yu.V. , kand. tekhn. nauk, retsenzent; MASLOV, Yu.A., inzh., retsenzent;

[Friction welding] Svarka treniem. Moskva, Izd-vo "Mashinostroenie," 1964. 153 p. (MIRA 17:6)

VOINOV, V.P., inzh.

City conference of Chelyabinsk welders. Svar. proizv. no.7: 44-45 Jl '64. (MIRA 18:1)

[redacted], G.I., inzh.

[illegible] speed of rotation during friction welding. Svar. proiz. no.3:9-12 Mr '64. (MIRA 18:9)

1. Yuzhno-issledovatel'skiy i proyektno-tekhnologicheskiy institut avtomatizatsii i mekhanizatsii mashinostroyeniya Yuzhno-Ural'skogo soveta narodnogo khozyaystva.

VOLKOV, V.P., inzh.; [illegible], [illegible], inzh.

Third municipal conference of Chelyabinsk welders. [illegible] [illegible]. no.8:46 Ag '65. [illegible]

VOINOV, V.P.

Optimal conditions for the friction welding of a tool. Avtom. svar. 18 no.3:14-18 Mr '65. (MIRA 18:6)

1. Nauchno-issledovatel'skiy i proyektno-tekhnologicheskiy institut avtomatizatsii i mekhanizatsii mashinostroyeniya Yuzhno-Ural'skogo soveta narodnogo khozyaystva.

L 27383-65 EWT(n)/EWP(v)/T/EWP(t)/EWP(k)/EWP(b) Pf-4 JD/HM

ACCESSION NR AM5043701 BOOK EXPLOITATION S/

21
B+1

Vavilov, A. F.; Voinov, V. P.

Friction welding (Svarka treniyem), Moscow, Izd-vo "Mashinostroyeniye", 1964, 153 p. illus., biblio. 6,000 copies printed.

TOPIC TAGS: friction welding

PURPOSE AND COVERAGE: This book cites the experience in the practical use of friction heat for joining materials. The theoretical problems of friction welding are examined with the basic phenomena occurring in sliding friction taken into account. The results of research and experience in the use of friction welding in our country and abroad are presented and the welding technology is considered. Information is included on the most interesting friction welding equipment. The prospects for the development of this new progressive welding method are shown. The book is intended for engineers and technicians in plants, research institutes, and design organizations and can be used by students in higher technical education institutions studying welding.

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SUBMITTED: 12Mar64 SUB CODE: MM

NO REF SOV: 063 OTHER: 010

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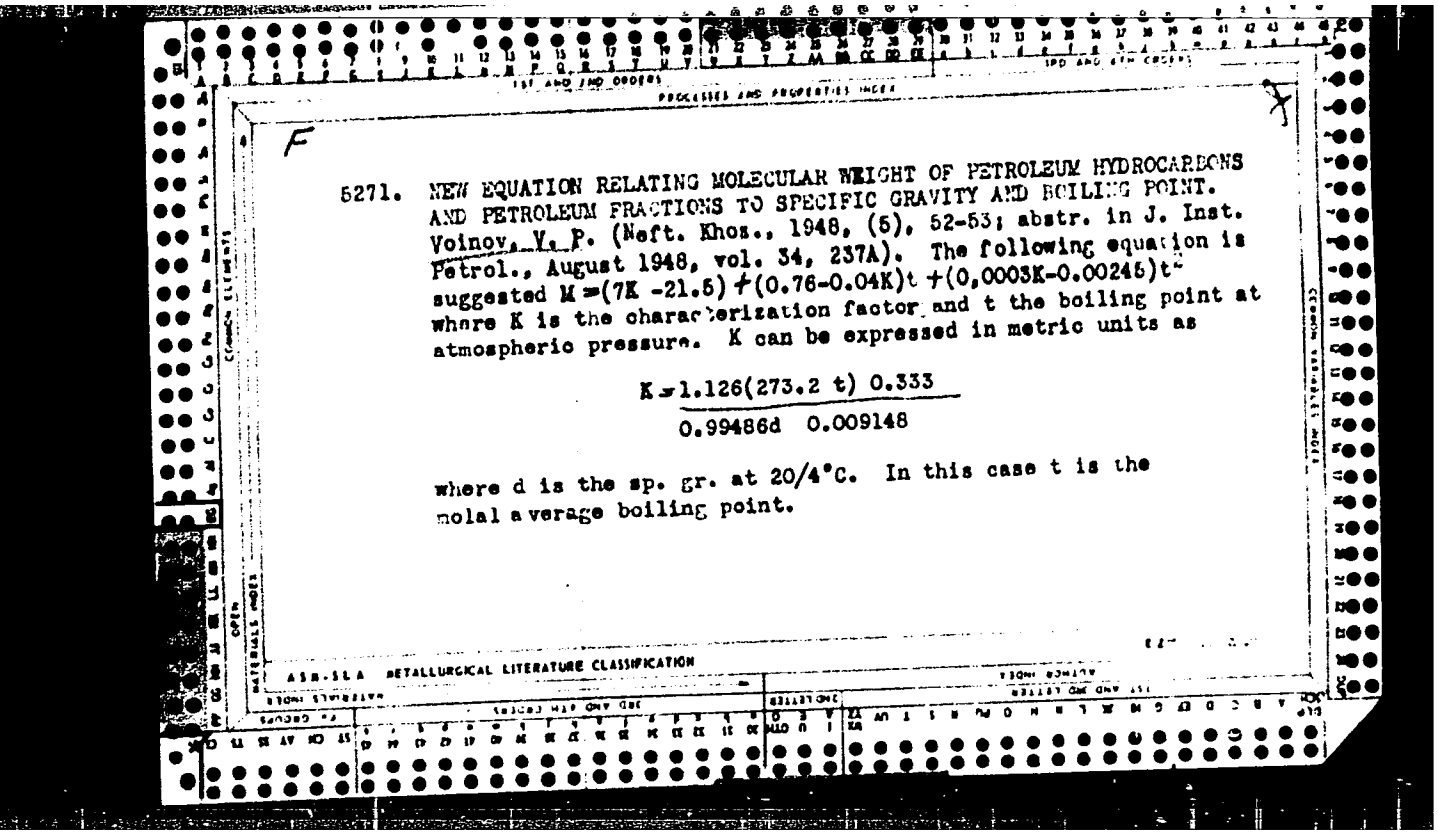

F

5271. NEW EQUATION RELATING MOLECULAR WEIGHT OF PETROLEUM HYDROCARBONS AND PETROLEUM FRACTIONS TO SPECIFIC GRAVITY AND BOILING POINT. Voinov, V. P. (Neft. Khoz., 1948, (5), 52-53; abstr. in J. Inst. Petrol., August 1948, vol. 34, 237A). The following equation is suggested $M = (7K - 21.5) + (0.76 - 0.04K)t + (0.0003K - 0.00245)t^2$ where K is the characterization factor and t the boiling point at atmospheric pressure. K can be expressed in metric units as

$$K = \frac{1.126(273.2\ t)\ 0.333}{0.99486d\ \ 0.009148}$$

where d is the sp. gr. at 20/4°C. In this case t is the molal average boiling point.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Br abs.

B1 - 3 Petroleum

New equation relating the molecular weight of petroleum hydrocarbons and petroleum fractions to the specific gravity and boiling point. V. P. Vainov (Neft. Khoz., 1948, No. 8, 32—33; J. Inst. Petrol., 1948, 34, 237A).—The equation is $M = (7K - 21{\cdot}5) + (0{\cdot}76 - 0{\cdot}04K)t + (0{\cdot}0003K - 0{\cdot}00245)t^2$, where K is the characterisation factor and t the b.p. at atm. pressure. K can be expressed in metric units as $K = 1{\cdot}126\,(273{\cdot}2 + t)^{0{\cdot}333}/(0{\cdot}99406\,g + 0{\cdot}009144)$, where g is $d_4^{15°}$, and t the mol. average b.p.

R. B. Clarke.

VOINOV, V.V.

Some remarks on interval selection in the statistical study of various parameters of productive reservoirs. Nauch.-tekh. sbor. po dob. nefti no.19:12-15 '63. (MIRA 17:8)

1. Vsesoyuznyy neftegazovyy nauchno-issledovatel'skiy institut.

BLOKH, S.S.; VOINOV, V.V.; [illegible]

Certain geological features of the Middle-Devonian producing layers in the Western Tetuk oil field. Nauch.-tekh.sbor. po dob. nefti no. 21:13-19 '63. (MIRA 17:5)

1. Pechorskiy nauchno-issledovatel'skiy ugol'nyy institut i Vsesoyuznyy neftegazovyy nauchno-issledovatel'skiy institut.

VOINOV, V.V.; SEMIN, Ye.I.

Method for making structural maps and determining oil boundaries in a dissected layer. Trudy VNII no.20:117-124 '59.
(MIRA 12:10)

(Petroleum geology)

VOINOV, V.V.; RYABININA, Z.K.

Effect of lithofacies characteristics of Tuymazy D_I and D_{II} producing layers on production processes. Trudy VNII 12:140-150 '58. (MIRA 12:3)
(Tuy'mazy region) (Rocks, Sedimentary)

VOINOV, V.V.

Correlation of well cross sections and division of productive layers. Trudy VNII no.11:50-58 '57. (MLRA 10:11)
(Bashkiria--Petroleum geology)

KRYLOV, Aleksandr Petrovich; BELASH, Pavel Maksimovich; BORISOV, Yuriy Petrovich, kand. tekhn. nauk; BUCHIN, Aleksandr Nikolayevich; VOINOV, Viktor Viktorovich; GLOGOVSKIY, Mark Mikhaylovich; MAKSIMOV, Mikhail Ivanovich; NIKOLAYEVSKIY, Nikolay Matveyevich, doktor ekon. nauk; ROZENBERG, Maks Davidovich; SAVINA, Z.A., ved. red.; POLOSINA, A.S., tekhn. red.

[Programming the development of oil fields; principles and methods] Proektirovanie razrabotki neftianykh mestorozhdenii; printsipy i metody. Moskva, Gostoptekhizdat, 1962. 429 p. (MIRA 15:6)

1.Chlen-korrespondet Akademii nauk SSSR (for Krylov).
(Oil reservoir engineering)

VOINOV, V.V.

Result of using some method of mathematical statistics in studying a nonuniform productive formation. Nauch.-tekh. sbor. po dob. nefti no.13:18-25 '61. (MIRA 16:7)

1. Vsesoyuznyy neftegazovyy nauchno-issledovatel'skiy institut.
(Oil fields--Production methods)

VOINOV, V.V.; RYABININA, Z.K.

Study of efficient thickness as a criterian of normal flow productive layers of some oil fields. Nauch.- tekh, sbor, po dob. nefti no.13:71-78 '61. (MIRA 16:7)

1. Vsesoyuznyy neftegazovyy nauchno-issledovatel'skiy insitut.
(Oil reservoir engineering)

VOINOV, V.V.; LEYBIN, E.L.; SEMIN, Ye.I.; KHRUSTALEVA, Z.A.

Studying the geological uniformity of producing layers. Nauch.-tekh.sbor. po dob. nefti. no. 14:3-7 '61. (MIRA 17:6)

VOINOV, Ya.P.

Dependence of the porosity of rocks on their density. Neft. khoz. 42 no.6:41-42 Je '64. (MIRA 17:8)

VOINOV, Ye.A. (Kiyev, Vorovskogo 31a, kv.17); NEKRASOV, P.Ya.; ISHCHENKO, M.P.; LOBODA, I.P.

X-ray, radio and surgical method for treating internally or externally located cancer. Klin. khir. no.3:12-18 '65. (MIRA 18:8)

1. Radio-khirurgicheskiy otdel (zav. - zasluzhennyy deyatel' nauki, prof. I.T.Shevchenko) Kiyevskogo nauchno-issledovatel'skogo rentgeno-radiologicheskogo i onkologicheskogo instituta.

VOINOV, Ye.A.; OPANASENKO, V.G.; POKROVSKIY, S.A. (Kiyev, ul.Chkalova, d.79, kv.10)

Clinical X-ray diagnosis of tumors of the soft tissues of the extremities. Klin.khir. no.7:28-33 Jl '62. (MIRA 15:9)

1. Kiyevskiy nauchno-issledovatel'skiy rentgeno-radiologicheskiy i onkologicheskiy institut.
(EXTREMITIES (ANATOMY)--TUMORS) (DIAGNOSIS, RADIOSCOPIC)

VOINOV, YE. A.

"The diagnosis of bronchial pulmonary cancer (in the light of clinical-roentgenological, bronchioscopic, and cytological investigations)." Central Sci Res Roentgenological-Radiological Inst, Min Health USSR. Leningrad, 1956. (Dissertations for the Degree of Candidate in Medical Science)

So: Knizhaya letopis', No. 16, 1956

VOINOV, Ye.O. (Moscow)

Luminescence microscopy in ophthalmology. Priroda 43 no.6:112-113 Je '54. (MLRA 7:5)

(Eye) (Microscope and microscopy)

ZAVALISHIN, A.: HANEYEV, S.: VOINOV, Yu.; FEDOROV, S.; KLYKOV, N.; TIMUSHEV, A. ANISIMOV, V.; KOL'CHUGIN, M.P., redaktor; PULIN, L.I., tekhnicheskiy redaktor.

[Chairman of collective farms speak about their experiences] Predsedateli kolkhozov o svoem opyte [Tula] Tul'skoe knizhnoe izd-vo, 1956. 79 p. [Microfilm] (MLRA 10:5)

(Collective farms)

VOINOV, Yu., inzhener-mayor, spetsialist 1-go klassa

Radar today and tomorrow. Tekh. i vooruzh. no.4:17-23 Ap '64. (MIRA 17:9)

1. KOL', V. M.: VOINOV, Yu. L.

2. USSR (600)

4. Cabbage

7. Growing cabbage seed on state farm. Sad i og. no. 11, 1952.

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

USSR / Human and Animal Morphology (Normal and Pathological). S
Methods and Techniques of Investigation.

Abs Jour : Ref Zhur - Biologiya, No 9, 1958, No. 40691

Author : Voinov, Yu. P.
Inst : Stavropol Agricultural Institute
Title : An Apparatus for Automatic Staining of Histological Sections

Orig Pub : Sb. nauchno-issled. rabot stud. Stavropol'sk. s.-kh. in-t, 1956, vyp 4, 154-157

Abstract : No abstract given

Card 1/1

VOINOV YU.P

U-2

USSR/Allergy

Abs Jour : Ref Zhur - Biol., No 6, 1958, No 27628

Author : Voinov, Yu. P.
Inst : Not Given
Title : "The Cutimeter" with an Automatic Locking Device for the Detection of a Skin Fold During Allergic Reactions to Tuberculosis.

Orig Pub : Sb. nauchno - issled. rabot stud. Stavropol'sk. s-kh. in-ta, 1956, vyp. 4, 151-154.

Abstract : The following improvement has been introduced to register intracutaneous tuberculin reactions in animals. Notches were made 1 mm. apart on the edge of a stationary portion of ordinary sliding calipers. A transportable plate and a locking device with a spring were attached to a movable frame. When a skin fold is squeezed the locking device is brought into action and inhibits further squeezing of the skin. The cutimeter is illustrated by freehand drawings.

Card : 1/1

VOINOVA, A.

For the benefit of the business. Fin. SSSR 37 no.5:66 My '63.
(MIRA 16:5)

(Kiev—Industrial organization)

VOINOVA, G.V.; LANTSMAN, A.S.

Economical distribution of active loads using the "Minsk-1" digital computer. Trudy Kar. fil. AN SSSR no.40:61-67 '64.
(MIRA 17:12)

ZOL'NIKOV, S.M., kand.med.nauk; PARFENOV, A.P.; DUDKO, A.M.; VOINOVA, I.I.

Basal anesthesia in patients with serious diseases of the cardiovascular system. Klin.khir. no.9:45-49 S '62. (MIRA 16:5)

1. Institut sedechno-sosudistoy khirurgii AMN SSSR (nauchnyy rukovoditel' - akademik A.N. Bakulev). Adres Zol'nikova: Moskva, Leninskiy prosp., d.8, Institut serdechno-sosudistoy khirurgii AMN SSSR.
(ANESTHESIA) (CARDIOVASCULAR SYSTEM—DISEASES)

85588

S/048/60/024/007/021/032/XX
B019/B056

24.6720

AUTHORS: Voinova, N. A., Dzhelepov, B. S., and Zhukovskiy, N. N.

TITLE: The γ Emission of Zr^{95}_{79} + Nb^{95}_{79}

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960, Vol. 24, No. 7, pp. 850-851

TEXT: This paper was read at the 10th All-Union Conference on Nuclear Spectroscopy, which took place from January 19 to January 27, 1960 at Moscow. The investigations were carried out by means of an elotron under standard conditions (Ref. 1); as source 5 g of $Zr(SO_4)_2$ was used, which was produced from fission products. In the source, Zr^{95} and its daughter product Nb^{95} were nearly in equilibrium. In Fig. 1, the spectrum of the recoil electrons is represented. In the energy range of from 100 to 1200 kev only two lines (720 $\pm$ 5 and 762 $\pm$ 2 kev) were observed. The first line belongs to Zr^{95}. According to data obtained by other authors, two lines should be present within the range of the second line, at 757 and 767 kev. The values obtained by the authors permit no separation of the

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The γ Emission of Zr^{95} + Nb^{95}

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762 ± 2 kev line. The intensity ratio of the two lines determined here is 0.14±0.02. In the energy range of from 100 to 720 kev no lines could be found. Should any lines, however, exist there, their intensity must be less than 0.6% of the intensity of the 762 kev line. The highest possible intensity of any line existing above 770 kev can be 0.5% of the intensity of the 762 kev line. There are 1 figure and 13 references: 2 Soviet, 9 US.

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR (Radium Institute imeni V. G. Khlopin of the Academy of Sciences, USSR)

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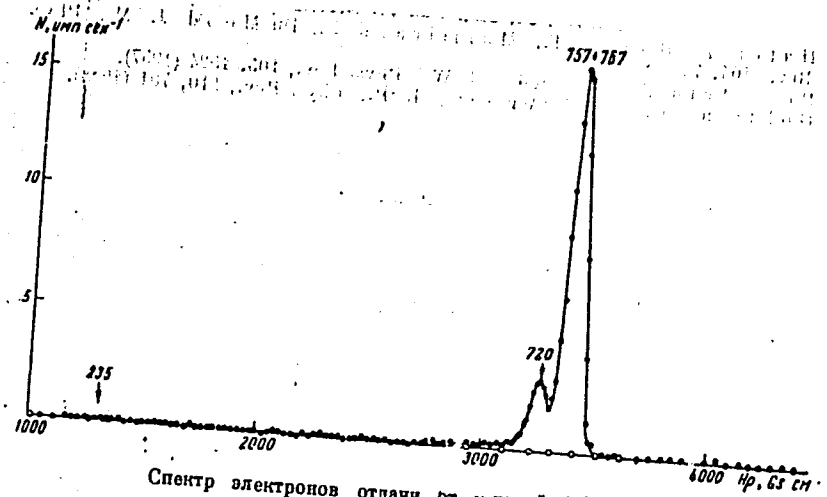

Спектр электронов отдачи от γ-лучей $Zr^{95} + Nb^{95}$

Card 3/3

VITMAN, V.D.; VOINOVA, N.A.; DZHELEPOV, B.S.

Relative intensities of γ-lines in Ga^{72}. Izv.AN SSSR.Ser. fiz. 27 no.2:249-257 F '63. (MIRA 16:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. D.I.Mendeleyeva i Fiziko-tekhnicheskiy institut AN SSSR im. A.F.Ioffe.
(Gamma-ray spectrometer) (Gallium isotopes)

VITMAN, V. D.; VOINOVA, N. A.; DZHELEPOV, B. S.

Relative intensities of the Ir^{194} γ-line in the 860-2130 Kev. energy range. Izv. AN SSSR. Ser. fiz. 16 no.12:1475-1479 D '62. (MIRA 16:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut meteorologii im. D. I. Mendeleyeva i Fiziko-tekhnicheskiy institut AN SSSR im. A. F. Ioffe.

(Iridium—Spectra)

S/048/62/026/012/004/016
B117/B186

AUTHORS: Vitman, V. D., Voinova, N. A., and Dzhelepov, B. S.

TITLE: Relative intensities of Ir^{194} γ-lines in the 860 - 2130 kev energy range

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 12, 1962, 1475-1479

TEXT: The γ-spectrum of Ir^{194} was investigated using the Elotron. This instrument has practically no background and its spectral sensitivity is well known, viz. with 4% accuracy in the 1150 - 2150 kev range. 4 radioactive sources, each of 20 - 30 curies, were provided by spectroscopically pure iridium powder, activated by a neutron flux of $5 \cdot 10^{13} - 10^{14}$ $cm^{-2} sec^{-1}$ in the FTI reactor and mixed with graphite. 23 γ-lines were found in the range investigated, the 1569 kev line being observed for the first time. A decrease in its intensity with a half-life of 18 ± 4 hr confirmed it as an Ir^{194} line. The peak observed near 1800 kev was interpreted as the sum of two γ-lines, $h\nu$ = 1786 and 1808 kev.
Card 1/3

S/048/62/026/012/004/016
B117/B186

Relative intensities of Ir^{194} γ-lines ...

Energies and the relative intensities determined were compared with the results of E. Johns and S. Nablo (Phys. Rev. 96, 1599, (1954)), and with those of I. Kern and G. Bäckström (Nucl. Phys., 19, 461 (1960)). The agreement is closer in the first case than in the second. The 70% divergence of the comparative values for the energy range above 1200 kev could be regarded as the result of a systematic error in the experiments carried out by Kern and Bäckström. Since apparently some of the values for the relative intensity given by these workers were incorrect, the multipole orders of the transitions they had determined were also checked and some of them recalculated. This paper was presented at the 12th Annual Conference on Nuclear Spectroscopy held in Leningrad from January 26 to February 2, 1962. There are 5 figures and 2 tables.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. D. I. Mendeleyeva (All-Union Scientific Research Institute of Metrology imeni D. I. Mendeleyev); Fiziko-tekhnicheskiy institut Akademii nauk SSSR im. A. F. Ioffe (Physicotechnical Institute of the Academy of Sciences USSR imeni A. F. Ioffe)

S/048/60/024/007/022/032/XX
B019/B056

24.6720

AUTHORS: Voinova, N. A., Dzhelepov, B. S., Zhukovskiy, N. N., and Khol'nov, Yu. V.

TITLE: The γ-Emission of Tb^{160} 19

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960, Vol. 24, No. 7, pp. 852-857

TEXT: This paper was read at the 10th All-Union Conference on Nuclear Spectroscopy, which took place from January 19 to January 27, 1960 at Moscow. The γ-emission of Tb^{160} was investigated by means of two γ-spectrometers, which evaluate the recoil electrons of the rytron and the elotron; their source was 0.146 g terbium oxide with an activity of roughly 800 millicuries. By means of the rytron, the spectrum was investigated according to the photoelectrons within the energy range from 80 to 300 kev; as a converter, a bismuth target was used. From 200 to 1700 kev the spectrum was investigated according to the recoil electrons under conditions that are normal for a rytron and an elotron. In Fig. 1 the photoelectron spectrum, obtained by means of the rytron, in Fig. 2 the recoil electron

Card 1/2

The γ-Emission of Tb^{160}

S/048/60/024/007/022/032/XX
B019/B056

spectrum, obtained by means of the elotron, and in Fig. 3 the recoil electron spectrum, obtained by means of the rytron is shown. In the Table, the energies and the relative intensities of the lines obtained by the authors are given. In the first column of the Table, the lines are numbered, in the second, the energies are given in kev, and in the third column the relative intensities (elotron, recoil electron), in the fourth column the relative intensities (rytron, recoil electron), and in the fifth column the relative intensities (rytron, photoelectron) are given. In the further columns, values obtained by Ye. Grigor'yev et al. (Ref. 4), Bäckström (Ref. 3), Jaffé (Ref. 6), Thiry (Ref. 7), Nathan (Ref. 8), Clark and Knowles (Ref. 9), Ofer (Ref. 10), and Clark (Ref. 11) are given. All lines measured are in the decay scheme of Tb^{160} shown in Fig. 4. There are 4 figures, 1 table, and 11 references: 3 Soviet, 4 US, 2 British, 1 Canadian, and 1 Swedish.

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR (Radium Institute imeni V. G. Khlopin of the Academy of Sciences, USSR)

Card 2/2

VITMAN, V.D.; VOINOVA, N.A.; DZHELEPOV, B.S.; KARAN, A.A.

γ - Transition with an energy of 892.4 Kev. in the W^{182} nucleus. Zhur. eksp. i teor. fiz. 40 no.2:479-482 F '61. (MIRA 14:7)

1. Vsesoyuznyy institut metrologii.
(Tungsten—Isotopes) (Gamma rays)

L 14480-65 EWT(m) DI[illegible]P/EWL/SSD(a)-5/SSD/ASD(f[illegible]-2/ASD(m)-3/[illegible](gs)/SSD(t)
ACCESSION NR: AP4048642 S/0048/64/028/010/1704/171[illegible]

AUTHOR: Balalayev,V.A.; Voinova,N.A.; Dzhelepov,B.S.; Meshter,A.; Shestopalova,S.A.

TITLE: New data on the conversion electron spectrum of Ta^{182} in the energy region above 820 keV /Report, Fourteenth Annual Conference on Nuclear Spectroscopy held in Tbilisi 14-22 Feb 1964/

SOURCE: AN SSSR. Izv.Seriya fizicheskaya, v.28, no.10, 1964, 1704-1710

TOPIC TAGS: nuclear physics, beta spectrum, electron conversion, nuclear spectroscopy, tantalum

ABSTRACT: The conversion electron spectrum of 115 day tantalum 182 was investigated with a double $\pi\sqrt{2}$ focusing β-spectrometer described elsewhere by one of the authors (S.A.Shestopalova,Izv.AN SSSR,Ser.fiz.25,1302,1961). The measurements were undertaken in order to record the spectrum at energies above 1220 keV, where it has not previously been adequately investigated. The source was a tantalum film vacuum evaporated onto an aluminum backing. It was activated with thermal neutrons and was examined four months later. Thirty eight conversion lines with energies from 822 to 1387 keV were detected and identified; 20 of these had not previously been reported.

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The observed lines and their relative intensities are tabulated, and the data are also presented graphically with the statistical errors shown. The relative intensities are compared with those obtained by V.S.Gvozdev et al.(Izv.AN SSSR,Ser.fiz. 24,1444,1960), S.S.Vasilenko et al. (Izv.AN SSSR,Ser.fiz.25,61,1961), L.N.Kondrat'yev et al. (Preprint ITEF 494,1963), and S.V.Starodubtsev et al. (Zhur.eksp.i teor. fiz.45,921,1963). The present data, except for three lines, are in very good agreement with those of Kondrat'yev et al., and they are in satisfactory agreement with those of Gvozdev et al. and with those of Vasilenko et al. There are large unsystematic deviations from the relative intensities reported by Starodubtsev et al.

"The authors take the occasion to express their deep gratitude to coworkers G.S. Novikov of the IGU and V.V.Pavlov of the FTI for assistance in preparing the source, to coworkers A.I.Medvedev and L.I.Shalayeva of the VNIIM for assistance in the measurements, and to student-diplomatist A.B.Andrezen of the LPI for assistance in reducing the data." Orig.art.has: 9 figures and 1 table.

L 14489-65
ACCESSION NR: AP4048642

ASSOCIATION: Vsesoyuzny*y nauchno-issledovatel'skiy institut metrologii im. D.I. Mendeleyeva (All-Union Scientific Research Institute of Metrology); Fiziko-tekhnicheskiy institut im.A.F.Ioffe Akademii nauk SSSR (Physicotechnical Institute, Academy of Sciences, SSSR)

SUBMITTED: 00 ENCL: 00

SUB CODE: NP NR REF SOV: 008 OTHER: 003

3/3

ACCESSION NR: AP4024039 S/0048/64/028/002/0222/0226

AUTHOR: Vitman, B.D.; Voinova, N.A.; Dzhelepov, B.S.

TITLE: Gamma radiation from As^{76} [Report, Fourteenth Annual Conference on Nuclear Spectroscopy held in Tbilisi 14 to 22 Feb. 1964]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no.2, 1964, 222-226

TOPIC TAGS: γ-ray spectrum, γ-transition, As^{76}, As^{76} decay

ABSTRACT: The present study was undertaken with a view to obtaining more accurate values for the relative intensities of the γ-rays from As^{76} and to search for weak γ-lines not observed hitherto. Nine sources with initial activities from 20 to 40 Curie were prepared by irradiating 1 g samples, sealed in quartz tubes, in the Physico-technical Institute reactor; the initial material was spectroscopically pure metallic arsenic. The γ-spectrum was investigated on the Elotron (recoil γ-spectrometer) of the All-Union Scientific Research Institute of Metrology under standard conditions (V.D.Vitman, N.A.Voinova and B.S.Dzhelepov, Izv.AN SSSR,Ser.fiz.27,249, 1963). The experimental spectrum and its resolution into components is presented in five figures. In all there were detected 25 γ-lines, including several not clearly

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ACCESSION NR: AP4024039

observed hitherto (the 510 keV γ-rays reported by G.Backstrom and J.Marklund (Arkiv. fys.17,393,1960) were not observed). The energy and intensity values are tabulated and compared with the data of earlier investigators. In general, the energy values obtained in the present investigation agree with the data of Backstrom and Marklund; there is also good agreement as regards the intensities of the strong lines. Divergences as regards the intensities of some of the weaker lines are attributed to the strong Compton background in the spectrometer employed by Backstrom and Marklund. Not all the newly detected lines can be accommodated in the decay scheme proposed by Backstrom and Marklund, but the present data are inadequate for proposing a more comprehensive decay scheme. Orig.art.has: 5 figures and 1 table.

ASSOCIATION: Vsesoyuzny*y nauchno-issledovatel'skiy institut metrologiy im. D.I.Mendeleyeva (All-Union Scientific Research Institute of Metrology); Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademiy nauk SSSR(Physicotechnical Institute, Academy of Sciences, SSSR)

SUBMITTED: 20Sep63 DATE ACQ: 08Apr64 ENCL: 00

SUB CODE: NS NR REF SOV: 003 OTHER: 002

Card 2/2

[illegible]EV, V. A.; VOINOVA, N. A.; DZHELEPOV, B. S.; MESHTER, A.; UCHEVATKIN, I. F.; [illegible]PALOVA, S. A.

"New Data on Conversion and the End-point Energies of Beta Spectra in the Decay of Ta^{182}."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

VNIIM, FTI (All-Union Sci Res Inst Metrology, Physico Technical Inst)

, V. S.; VOINOVA, N. A.; DZHELEPOV, B. S.; POGACHEV, I. M.

"The Spectrum of Conversion Electrons of Ta^{182} (The Region of Low Energies)."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

LGU, FTI (Leningrad State Univ, Physico Technical Inst)

SOV/48-23-2-3/20

21(7)
AUTHORS: Voinova, N. A., Dzhelepov, B. S., Zhukovskiy, N. N.

TITLE: Investigation of the γ-Spectrum of Se^{75} Within the Range 200 ÷ 900 kev (Issledovaniye γ-spektra Se^{75} v oblasti 200 ÷ 900keV)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 2, pp 185-187 (USSR)

ABSTRACT: The investigations were carried out by means of the magnetic spectrometers "Rytron" and "Elotron" by use of recoil electrons. Two experimental curves are given in figure 1, which correspond to the γ-spectrum of Se^{75} and were obtained 1) by means of "Rytron" with cellophane target with a surface density of 6.15 mg/cm^2 and 2) by means of "Elotron" with polystyrene target with a surface density of 2.34 mg/cm^2. By analysis of the curves 5 components with the energies 207, 259, 278, 305 and 402 kev were separated from 2). The weaker range of the spectrum was investigated by means of "Rytron", and the 475 and 570 kev lines were found in addition (Fig 2). For a comparison, the energies and intensities of the γ-lines of Se^{75} obtained from data of other authors are listed in a table (Refs 1, 2, 3, 4, 5). Besides the authors of this

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Investigation of the γ-Spectrum of Se^{75} Within the Range 200 ÷ 900 kev

paper, only Zolotavin (Ref 3) found the 475 kev line. The line 570 kev was found also by Van den Bold (Ref 2), Zolotavin (Ref 3) and Langevin-Joliot (Ref 4). There are 2 figures, 1 table, and 5 references, 1 of which is Soviet.

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR (Radium Institute imeni V. G. Khlopin of the Academy of Sciences, USSR)

24(5),24(7)

AUTHORS: Voinova, N. A., Dzhelepov, B. S., Zhukovskiy, N. N.

SOV/48-23-7-8/31

TITLE: The γ-Emission of Ta^{182} in the Energy Range of 300-1,500 kev (γ-izlucheniye Ta^{182} v oblasti energiy 300-1500 kev)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 7, pp 828-830 (USSR)

ABSTRACT: The introduction of the present paper mentions in short the results of many investigations of the rotational band of the ground state of W^{182}; then it is stated that the experiments described were carried out by an elotron with the purpose of determining the relative intensity of the γ-lines, at the same time looking for new lines in the range of energy indicated. The measured values are compiled in a diagram (Fig 1), and it is shown that there are practically no lines in the range $h\nu$ = 300-850 kev, and that there are 7 lines of different intensities in the range $h\nu$ = 850-1,350 kev. Finally, some known lines of low intensity in this range are mentioned. There are 2 figures, 1 table, and 5 references, 2 of which are Soviet.

Card 1/2

The γ-Emission of Ta^{182} in the Energy Range of 300-1,500 kev

SOV/48-23-7-8/31

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR (Radium Instituteimeni V. G. Khlopin of the Academy of Sciences, USSR)

Card 2/2

S/048/61/025/002/007/016
B117/B212

AUTHORS: Voinova, N. A., Dzhelepov, B. S., Khol'nov, Yu. V.

TITLE: Gamma radiation of Ta^{182}

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 2, 1961, 233-236

TEXT: The present paper was read at the 11th Annual Conference on Nuclear Spectroscopy (Riga, January 25 to February 2, 1961). The authors have investigated the gamma spectrum of Ta^{182} in a wide energy range by using a "ritron" and "photoritron". The source was a 2.8 g tantalum foil activated by neutrons. Its activity amounted to about 2 curies. Fig. 1 shows the photoelectron spectrum of a bismuth target that had been bombarded with gamma rays of Ta^{182}, recorded by means of the photoritron. The relative intensities of soft gamma rays are given in the last column of the table; they have been determined from the relative intensity of the photopeaks. The correction for the absorption of gamma rays have been made in the source and in the input slit. Besides, also the sensitivity of the instrument was